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# CANADIAN PATENT

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LAMP AND MANOMETER INDICATOR FOR SYSTOLIC AND  
DIASTOLIC BLOOD PRESSURE

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ABSTRACT OF THE DISCLOSURE

10 A manometer is coupled to the end of an air conductor of the wrapping of a blood pressure instrument for wrapping the arm of a person. The manometer includes a sealed housing, a column of mercury in the housing, scale indications alongside the column of mercury on the housing for indicating pressure and a plurality of electrical contacts, each at a corresponding one of the indications in operative proximity with the mercury. A blood pressure indicating device in the wrapping is electrically connected to the manometer for indicating the simultaneous occurrence of the sound of a heart contraction and the electrical contact of the mercury with a determinable one of the electrical contacts.

#### DESCRIPTION OF THE INVENTION

20       The present invention relates to a blood pressure instrument. More particularly, the invention relates to a blood pressure instrument for measuring systolic and diastolic blood pressure of a person.

      Objects of the invention are to provide a blood pressure instrument of simple structure, which is inexpensive in manufacture, and functions efficiently, effectively and reliably to indicate the



blood pressure of a person taking his or her own blood pressure without the use of a stethoscope.

In order that the invention may be readily carried into effect, it will now be described with reference to the accompanying drawings, wherein:

FIG. 1 is a view of an embodiment of the blood pressure instrument of the invention in use;

FIG. 2 is a view of the flexible wrapping of the blood pressure instrument of the invention; and

10 FIG. 3 is a circuit diagram of the blood pressure instrument of the invention.

The blood pressure instrument of the invention is for measuring the systolic and diastolic blood pressure of a person 1 (FIG. 1). The instrument includes a flexible wrapping 2 (FIGS. 1 and 2) for the arm 3 of the person 1. Air conducting means of known type are provided in the wrapping 2 in a known manner. An air producing device 4 of the usual type, constituting a flexible bulb (FIGS. 1 and 2) is  
20 provided at the free end of the air conducting means outside the wrapping 2 and produces air and supplies it through the air conducting means. An air pressure gauge 5 of any suitable type is provided in the air conducting means outside the wrapping 2, as shown in FIGS. 1 and 2.

The blood pressure instrument of the invention comprises a manometer 6 (FIGS. 1 and 3) coupled to the end of the air conducting means in the wrapping 2. The manometer 6 includes a sealed housing and a column of mercury in the housing in the usual manner of manometers used for this purpose. Scale indications 7, and so on (FIG. 1) are provided alongside the column of mercury on the housing for indicating pressure. A plurality of electrical contacts 8, 9, 10, and so on (FIG. 3) are provided, each at a corresponding one of the indications 7, and so on, in operative proximity with the mercury in the housing.

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A blood pressure indicating device is provided in the wrapping 2 and is electrically connected to the manometer 6 for indicating the simultaneous occurrence of the sound of a heart contraction and the electrical contact of the mercury with a determinable one of the electrical contacts 8, 9, 10, and so on. The blood pressure indicating device comprises a transducer device in the wrapping 2 for detecting the sound of a heart contraction of the person 1 around whose arm 3 the wrapping is placed converting the sound to an electrical signal. The transducer device comprises a first sound to electrical transducer 11 of any suitable known type for indicating the diastolic sound

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and a second sound to electrical transducer 12 of any suitable known type for indicating the systolic sound, as shown in FIG. 2. A plurality of electronic gates 13, 14, 15, and so on, such as, for example, AND gates (FIG. 3) are provided, each of the AND gates has two inputs and an output. A plurality of electric lamps 16, 17, 18, and so on (FIG. 3), are provided.

10 A circuit including a source 19 of electrical energy of any suitable type such as, for example, a commercial power source of alternating current (FIG. 3), electrically connects each of the electrical contacts 8, 9, 10, and so on, to a corresponding one of the lamps 16, 17, 18, and so on, via one of the inputs and the output of a corresponding one of the gates 13, 14, 15, and so on and electrically connects the transducer device to the other of the inputs of each of said gates. Thus, when a signal is produced by the transducer device simultaneously with the contact of the mercury with a corresponding one of the electrical contacts, 20 the corresponding gate transfers an electrical signal to the corresponding lamp to energize said lamp. Thus, all the user need do is look at the manometer 6 and note which lamp lights up and is thereby apprised of his or her own blood pressure without the need for a stethoscope.

While the invention has been described by means of a specific example and in a specific embodiment, I do not wish to be limited thereto, for obvious modifications will occur to those skilled in the art without departing from the spirit and scope of the invention.

The embodiments in which an exclusive property or privilege is claimed are defined as follows:

1. A blood pressure instrument for measuring the systolic and diastolic blood pressure of a person, said instrument including a flexible wrapping for the arm of a person, air conducting means in the wrapping, air producing means at the free end of the air conducting means outside the wrapping for producing air and supplying it through the air conducting means, and an air pressure gauge in the air conducting means outside the wrapping, said blood pressure instrument comprising
  - a manometer coupled to the end of the air conducting means in the wrapping, said manometer including a sealed housing, a column of mercury in the housing, side indications alongside the column of mercury on the housing for indicating pressure, and a plurality of electrical contacts, each at a corresponding one of the indications in operative proximity with the mercury;
  - and

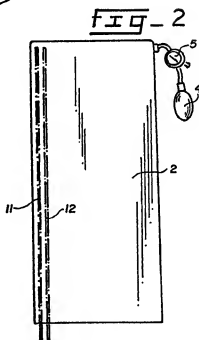
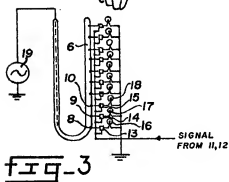
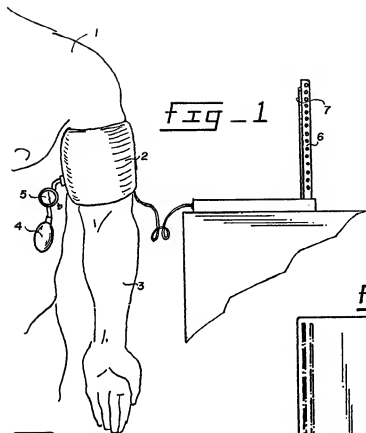
blood pressure indicating means in the wrapping and electrically connected to the manometer for indicating the simultaneous occurrence of the sound of a heart contraction and the electrical contact of the mercury with a determinable one of the electrical contacts, said blood pressure indicating means



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comprising transducer means in the wrapping for detecting the sound of a heart contraction of the person around whose arm the wrapping is placed and converting the sound to an electrical signal, a plurality of gate means, each having two inputs and an output, a plurality of electric lamps, and circuit means including a source of electrical energy for electrically connecting each of the electrical contacts to a corresponding one of the lamps via one of the inputs and the output of a corresponding one of the gate means and electrically connecting the transducer means to the other of the inputs of each of the gate means whereby when a signal is produced by the transducer means simultaneously with the contact of the mercury with a corresponding one of the electrical contacts, the corresponding gate means transfers an electrical signal to the corresponding lamp to energize said lamp.





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